METHODS AND SYSTEMS FOR PREDICTING ELECTROMAGNETIC SCATTERING

ABSTRACT OF THE DISCLOSURE

Methods and systems for predicting electromagnetic scattering are disclosed. In one embodiment, a method includes covering at least a portion of an analytical model of a target with computational cells, and formulating a plurality of approximation functions. The formulating of the approximation functions includes simplifying a set of method of moments equations based on Kirchhoff's first law to provide an impedance matrix multiplied by a solution vector equated with a right hand side vector. A plurality of boundary conditions are established for the plurality of approximation functions, and the plurality of approximation functions are solved for the solution vector. The impedance matrix is deflated by a sparse transformation determined by the geometry of the scatterer, independent of material properties and frequency, subsequently reducing the computational complexity of the scattering calculation.

BLACK LOWE & GRAHAM PLLC
816 Second Avenue
Seattle, Washington 98104
206.381.3300 • F: 206.381.3301